

WHAT IS CLAIMED IS :

- ~~1. A manufacturing method of carbon nanotubes by means of laser ablation, wherein carbon molecules having 5-memberd carbon ring bonds are included at least in part of a laser irradiation target.~~
- ~~2. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein carbon molecules having fullerene bonds are included in the laser irradiation target.~~
- ~~3. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein C₆₀ molecules are used as the carbon molecules having 5-memberd carbon ring bonds.~~
- ~~4. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein a short pulse-width laser is used for the laser ablation.~~
- ~~5. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein one or more catalysts are used in the laser ablation.~~
- ~~6. A manufacturing method of carbon nanotubes as claimed in claim 5, wherein one or more catalysts are included in the laser irradiation target including the carbon molecules having 5-memberd carbon ring bonds.~~
- ~~7. A manufacturing method of carbon nanotubes as claimed in claim 6, wherein the catalysts include Ni and/or Co.~~
- ~~8. A manufacturing method of carbon nanotubes as claimed in claim 7, wherein the total amount of the Ni and/or Co in the laser irradiation target is set between 4.5 at% and 5.5 at%.~~

9. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein the laser ablation is conducted in a low temperature process.

10. A manufacturing method of carbon nanotubes as claimed in claim 9, wherein the laser ablation is conducted at temperature of 500 °C or lower.

11. A manufacturing method of carbon nanotubes as claimed in claim 10, wherein the laser ablation is conducted at temperature between 350 °C and 450 °C.

12. A manufacturing method of carbon nanotubes as claimed in claim 1, wherein the carbon nanotubes are single-wall carbon nanotubes.

13. A laser irradiation target for the manufacture of carbon nanotubes by means of laser ablation, including carbon molecules having 5-membered carbon ring bonds.

14. A laser irradiation target for the manufacture of carbon nanotubes as claimed in claim 13, including carbon molecules having fullerene bonds.

15. A laser irradiation target for the manufacture of carbon nanotubes as claimed in claim 13, wherein C₆₀ molecules are used as the carbon molecules having 5-membered carbon ring bonds.

16. A laser irradiation target for the manufacture of carbon nanotubes as claimed in claim 13, wherein the catalysts are included in the laser irradiation target.

17. A laser irradiation target for the manufacture of carbon nanotubes as claimed in claim 13, wherein the catalysts include Ni and/or Co.

18. A laser irradiation target for the manufacture of carbon nanotubes as claimed in claim 17, wherein the total amount of the Ni and/or Co in the laser irradiation target is set between 4.5 at% and 5.5 at%.

Addas

With the exception of the first two, all the remaining species are described from material collected by Mr. J. C. Merriam.